

S r. No. 09/868,379

Docket No. H 3763 PCT/US

REMARKS

Claims 8-14 are pending. All independent claims 8, 11, 13, and 14 as amended herein recite a suspension of one or more phosphate, fluoride, or fluorophosphate calcium salts comprising primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble surfactant or of a water-soluble polymeric protective colloid adsorbed onto the particles. Support for the amendments is found at page 9, lines 11-13. These particles are not taught or suggested by Rudin et al. U.S. 6,254,855, taken alone or in combination with the other art of record.

Rudin et al. U.S. 6,254,855 discloses hydroxyapatite nanoparticles of generally the same dimensions as recited in applicants' claims. Applicants' claims differ from the disclosure of Rudin et al. U.S. 6,254,855 in that this Rudin reference does not disclose any means of stabilizing the particles against agglomeration.

Atsumi et al. U.S. 5,833,959 discloses hydroxyapatite particles having sizes extending into the nanoparticle range, but not the specific size and shape disclosed and claimed by applicants. In addition, Atsumi discloses dental care preparations combining its disclosed hydroxyapatite particles having sizes ranging from 0.05 μm to 1.0 μm and various surfactants, including sodium lauryl sulfate.

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Burghard U.S. 5,935,275, whose PCT counterpart WO 96/34829 is discussed at page 3 of this application, discloses methods of stabilizing insoluble inorganic nanoparticles against agglomeration, including by precipitation in the presence of surface-active compounds. The particles disclosed do not include hydroxyapatites.

Neither Atsumi nor Burghard can amend the deficiencies of Rudin et al. U.S. 6,254,855. As explained at page 3, line 25 and following of the present application, the stabilized particles of the invention are obtained by precipitation or by redispersion in the presence of an agglomeration inhibitor (colloid or surfactant). Atsumi only discloses grinding for preparing its hydroxyapatite particles. There is no teaching or suggestion of precipitation. In addition, Atsumi discloses only very generally preparing dental care formulations by "[a]ny mixing procedures appropriate for the purpose" From this disclosure one of skill cannot reasonably assume that the mixing conditions used to prepare the final compositions would ever produce the conditions necessary to adsorb the surfactants onto the surface of its hydroxyapatite particles.

The problem with Burghard is that one of skill finds no motivation to combine its disclosure with the other references. Burghard is directed to producing nanoscale powders for use in powder metallurgical processing and manufacturing. There is no disclosure of any phosphate, fluoride, or fluorophosphate calcium salts as are claimed here, nor is there any suggestion to extend its process to preparing nanoscale powders made of other materials. Thus one of skill would not have combined this reference with Atsumi or Rudin et al. U.S. 6,254,855.

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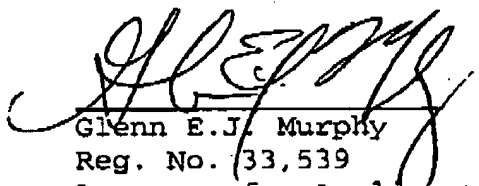
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With regard to the issue of interference between this application and Rudin et al. U.S. 6,254,855, applicants believe that they are not claiming the same patentable invention. Applicants' patentability resides in a combination of elements, one of which, namely the adsorption of surfactant or colloid onto the particles, is entirely absent from the disclosure of Rudin et al. U.S. 6,254,855. Thus applicants believe that it will not be possible to fashion a count for an interference.

CONCLUSION

Applicants ask that the shortened statutory period to respond be extended three months from May 18, 2003 to July 18, 2003. Please charge our Deposit Account No. 01-1250 in the amount of \$930.00 for the extension fee. Order No. 03-0363. Should entry and consideration of this Amendment require fees that have not been accounted for, the Commissioner is authorized to charge Deposit Account No. 01-1250 for the deficiency.

Respectfully yours,


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